ARIES SPAS

BY ARIES ACRYLIC MFG., INC.

OWNER'S MANUAL

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BY ARIES ACRYLIC MANUFACTURING, INC. 4176 I-30 EAST ROCKWALL, TEXAS 75087

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IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

- WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

- A wire connector is provided on this unit to connect a minimum No. 8 AWG (8.4mm$^{2)}$ solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5 m) of the unit.

- DANGER - Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.

- DANGER - Risk of injury. The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.

- DANGER - Risk of Electric Shock. Install at least 5 feet from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is

permanently connected by a minimum No. 8 AWG (8.4 mm^2) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.

- DANGER - Risk of Electric Shock. Do not permit any electric appliance, such as a light, telephone, radio, television, within 5 feet of a spa.

- WARNING - To reduce the risk of injury:

    - The water in the spa should never exceed 40˚ C (104˚ F). Water temperatures between 38˚ C (100˚ F) and 40˚ C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.

    - Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100˚ F (38˚ C).

    - Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices varies.

    - The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.

• Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.

• Persons using medication should consult a physician before using a spa since some medications may affect heart rate, blood pressure, and circulation.

SAVE THESE INSTRUCTIONS.

About this manual

This booklet was designed to be an aid in understanding the operation, functions, and maintenance of your Aries Spa.

To receive maximum pleasure from your Aries Spa, it is helpful to understand how the spa operates and to have knowledge of proper maintenance procedures.

Different applications and installations require various types of equipment. If your equipment is different from that described in this manual, it may be necessary to refer to any manuals supplied by your equipment manufacturer for specific operating and installation information.

We hope that this manual will give you all the information needed to understand the basics of operation and maintenance of your spa. If you have questions that were not answered in this booklet, please give us a call.

Enjoy,
The Staff at Aries Spas

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Installation of Portable Spa

HAVE YOUR ELECTRICIAN READ BEFORE INSTALLATION BEGINS!

Please contact a qualified electrician to wire your spa.

Your Aries Spa requires a GFCI (ground-fault current interrupter) for safe installation and operation.

All Aries Spas require a 220 volt supply circuit consisting of four wires. Use #6 AWG wire (copper conductors only).

All metal components of the equipment assembly have bonding lugs. These lugs should be connected together with a minimum #6 AWG copper conductor.

All spa equipment packs require a dedicated GFCI breaker. The breaker should be 50 amp, single phase, 220 volt service, consisting of four wires; two hot wires, a neutral wire and a ground wire. Wire size is determined by length of run, but generally #8 wire for 0-50 feet and #6 wire for 51+ feet is recommended. This might vary, depending on length of run or other unforeseen factors. **Any variation from this service will void warranty.**

The equipment package should be installed such that the heater housing is in a level, horizontal position and the bottom of the equipment is approximately four inches above ground level and protected from water and other elements.

All Aries Spas are designed to be permanently connected units, consisting of pumps, heater, light fixture and Spa-Side Control.

It is the responsibility of the spa owner to insure that electrical connections are made by a qualified electrician in accordance with the National

Electric Code and any local and State Electrical Codes in force at the time of installation. This equipment has been designed to operate on 60 Hz alternating current only and at 240 Volts. Make sure that power is not applied while performing any electrical installation. A copper bonding lug has been provided on the electrical equipment pack to allow connection to local grounded points. The ground wire must be at least 8 gauge solid copper and must be connected securely to a grounded metal structure.

Replacement of an existing Equipment Pack

Follow the instructions above for equipment installation so that the proper settings are made for current and voltage that the spa was connected to. Due to the frequent updates in equipment models, please consult an Aries Spa technician if there are any differences in component connections.

Location

It is mandatory for warranty purposes that your spa be located on a solid, level foundation.

A filled spa is very heavy (up to 5,000 lbs.), with most of the weight resting on the center portion. Without firm support for the bottom of the spa, settling can occur, causing the outside edge or "lip" of the spa to carry the weight-load, pulling the spa out of shape. *Cement blocks are not acceptable, unless they are concreted into place.*

A 4" thick concrete pad is the desired foundation. If a balcony or deck is used, it must support at least 75 pounds per square foot.

Aries Spas will not be responsible for damages incurred on spas placed on other than level, solid surfaces.

If your spa is located near water sprinklers, adjust or relocate them so that water will not hit the siding of the spa.

Gates giving access to the spa should be self-closing and self-locking for safety.

Operation

Initial Start-up

Please read this section fully before attempting initial start-up of your spa.

Always turn the thermostat(s) and electric power off when filling or draining the spa, and always fully open any valves that could restrict water flow to and from the heater element.

Filling your Spa

Your spa should be filled with water to approximately the middle of the skimmer (to identify, see picture of skimmer in the "Suctions Fittings" section of this manual). The water level should never be below the regular or whirling jets, but should never cover any neck jets, recovery fitting, or built -in pillows. *Do not overfill spa*.

Starting your Spa

Turn on your home circuit breaker and service disconnect (if applicable). Within 10 to 15 seconds all pumps on the spa will run for 1 minute. The Jet Pumps and Air Pump will then turn off, leaving the continuous-circulation pump running. If, within 30 to 60 seconds, water is not observed flowing from Return Jets (see "Jets" section for description), lift the lid that covers your Top Loading Pressure Filter, and release any trapped air by turning the Bleed Valve (the small valve located on the filter lid) counterclockwise until you hear a release of air. *Do not totally unscrew or remove the Bleed Valve. Do not remove the black locking ring of the filter lid at this time or serious damage could occur.* Opening the Bleed Valve will allow any trapped air to be purged and some gurgling or bubbles may come from the Return Jets. Once a steady stream of water starts spurting from the Bleed Valve, retighten by turning in a clockwise direction until hand-tight. (For more information on the Bleed Valve, see the "Top Loading Pressure Filter" section of this manual.)

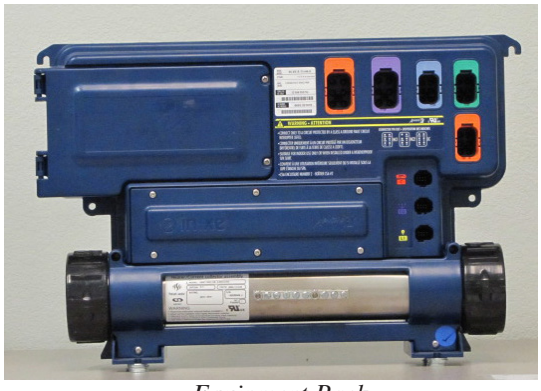
Once the Circulating Pump motor is running and water is circulating properly, you should be able to observe water and/or bubbles coming from the two Circulating Jets (one regular-sized, one small) usually located near your steps and/or the light. This indicates that the water is circulating properly.

If no water flow is observed, do the following:

1. Listen to make sure that the Circulating Pump motor is running.
2. Make sure that the Knife ("T" shaped) Valves are open. These valves are located on either side of the Equipment Pack. They are opened if the handles are extended as far out as they will go. When opened, you should be able to see either the exposed silver rod or a red retainer clip.
3. Recheck the Bleed Valve on the filter lid to make sure you have released all trapped air.

If you have tried all the above, and there is still no visible water flow coming from the Circulation Jets, **STOP!** Turn off your GFCI circuit breaker and / or quick disconnect and call the Aries Spa Factory phone support center immediately! Do not go on to the next step or serious damage may occur to your spa Equipment Pack.

Once you are sure that the Circulating Pump motor is circulating the water, proceed to the next section.



Equipment Pack

Spa-Side Controls

Your Aries Spa equipment is composed of state-of-the-art microprocessor circuitry, similar to that of a home computer. All user-functions and operational changes are done via the Spa Side Control.

1	Digital Readout	8	Temperature Icon
2	Smart Winter Icon	9	Pause Button
3	Jet Icon	10	Jet Button
4	Air Blower Icon	11	Air Blower Button
5	Light Icon	12	Light Button
6	Filter Icon	13	Heat Up Button
7	Heater Icon	14	Heat Down Button

Topside Controls

The Topside Control Pictured above is that of a single Jet Pump System. A 2-Jet Pump System will have the additional Jet Icon (between #2 and #3 above). The "Pause" button (#9) will instead be labeled "Jet 1".

Setting the Desired Temperature

The Thermostat can be set to temperatures within a range from 59˚ through 104˚ as described below. Depending on whether you desire to raise or lower the temperature, push and hold either the Up or Down arrow button for a few seconds. The "actual" water temperature in the display will be replaced with the "desired" temperature, an arrow in the digital readout will show under the small temperature icon above the display, and the number will begin to increase or decrease, depending on which arrow you are depressing. When you get to your new desired temperature, simply release the arrow button. The spa will now begin adjusting the water to the desired temperature and maintain it there.

WARNING: Prolonged immersion in hot water may induce hyperthermia. The causes, symptoms and effects of hyperthermia may be described as follows: Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F. The symptoms of hyperthermia include: drowsiness, lethargy and an increase in the internal temperature of the body. The effects of hyperthermia include:

- ◊ *Unawareness of impending hazard*
- ◊ *Failure to perceive heat*
- ◊ *Failure to recognize the need to exit the spa*
- ◊ *Physical inability to exit the spa*
- ◊ *Fetal damage in pregnant women*
- ◊ *Unconsciousness and danger of drowning*

WARNING - The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia.

Digital Temperature Readout / Adjustment Readout

The Spa-Side Control has a digital readout of the spa's water temperature. (It is not uncommon for the temperature shown to vary from the actual water temperature by a few degrees.)
This readout also displays the desired temperature as you reset (see below).

Up (Increase) and Down (Decrease) Arrows

To increase the water temperature, push and hold the "Up Arrow" button. To decrease the temperature, push and hold the "Down Arrow" button. As you hold the buttons to adjust, the digital temperature readout, which previously showed the actual water temperature, will temporarily show the "desired temperature" you are adjusting to. Once your desired temperature is displayed, release the adjustment arrow. The temperature display will revert to the "actual" temperature.

Function Buttons

Pause Button (on Single Pump models only)

This button turns off all spa operations for 30 minutes to facilitate routine maintenance, such as cleaning filter, etc. To turn off system, press and hold the Pause button for 5 seconds. The digital readout will read "OFF". (It is not uncommon for the spa to continue running for 30 to 60 seconds to cool the motor before shutting down.) After 30 minutes normal operation will automatically resume.

> *Caution: Take care not to push any of the buttons while the system is in this "pause" mode until you are ready to restart spa operation. Hitting any of the buttons will restart the system.*

To restart your system, push the Pause button briefly. The system will resume operation.

Jet Button - Single Jet Pump System

Press the button once to turn on all the different types of hydrotherapy (water) massage jets in your spa. Press again and the Jet Pump will turn off.

Jet 1 Button - 2 Jet Pump System

On spas that are equipped with 2 Jet Pumps this button has two functions. When pressed once quickly (as described above in Single Pump System, approximately half of the hydrotherapy (water) jets will operate. Press again to turn off jets. When pressed and held for 5 seconds, the spa will turn off for 30 minutes, as described in the Pause Button on Single Pump models (above).

Jet 2 Button - (On optional 2 Pump System only)

Push this button and it will operate the jets not powered by using the Jet Button 1. Press again and the pump turns off.

When the Jet Pump(s) are turned on, an internal timer in the control box will automatically turn the jet pump(s) off after 30 minutes, should you forget to turn them off. If you are still using the spa and the Jet Pump(s) shut off while you want them on, simply push the Jet Button(s) and the pump will come back on for another 30 minute cycle.

Air Button

The Air Button operates the Air Blower Pump. This pump forces air through the Air Injector Fittings. These are located in the spa seats or on the vertical wall under the seats, and give a soft tingly massage.

Push the Air Button and the Air Blower will come on. Push it again and it will shut off.

The system will automatically turn the blower off after 30 minutes should you forget. If you are using the Air Blower and it turns off but you want it to be on, simply push the Blower Button. It will come back on again for another 30 minute cycle.

Light Button

> *Note: Pressing and holding the Light Button for 5 seconds will put the system into "Programming Mode" (see Custom Circulation Modes later). To avoid putting the system into programming mode, just push the button and release for normal light operation. If you accidentally put it in programming mode, do nothing. After about 10 seconds, the system will return to its normal function.*

The Light Button operates the Spa Light, which is usually located in the step area of the spa. Push the button once and the light will turn on. Push it again to turn off.

The Spa controller box will automatically turn off the light after 1 hour, should you forget to turn it off.

The Raydiance® Light is an option. A specialty LED bulb replaces the standard light bulb. This light has 8 different colors including fade/strobe. The standard light can be replaced by the Raydiance® light, if desired.

The Raydiance® light is operated as follows: Push the Light button to turn on or off as you would the standard light. As long as the light was left on for more than 5 seconds, the next time you turn it on, it will remain the same color as it was last time you used it. To change the color, turn the light off within 5 seconds of turning it on, then immediately turn it on again. It will cycle to the next color. The last color on the cycle is fade/strobe. The light starts by strobing, then fades from one color to another, cycling through all 7 of the other colors. Push on and off the Light button until you get to the color of your choice.
The bulbs for either the standard or the Raydiance® lights are easily replaced from the underside of the spa, accessed by the equipment area door. Both can be purchased at the Aries Spa Store.

The standard bulb is a 12V, 4 watt low-voltage outdoor lighting type of bulb also found at most hardware stores.

Indicator Icons

An indicator pointer will show in the digital display under these icons, depending on what components of the system are operating at that time.

Smart Winter Mode Icon

A pointer will illuminate under the icon whenever the system has been automatically activated to run because of low temperature at the equipment site.

Jet 1 Icon

A pointer will illuminate under the icon any time the Jet Pump is running.
.

Jet 2 Icon (on optional 2 Pump System)

A pointer will illuminate under the icon any time the second Jet Pump is running.

Air Blower Icon
A pointer will illuminate under the icon any time the Air Blower is running.

Light Icon
A pointer will illuminate under the icon any time the Light is on.

Filter Icon
Any time the Circulating Pump is running, a pointer will illuminate under the icon.

Heater Icon
Any time the heater is running, a pointer will illuminate under the icon. When the water reaches the desired temperature and heater turns off, it will no longer be illuminated.

Temperature Icon
Any time you are adjusting the temperature, a pointer will illuminate and remain for 5 seconds after button is released.

Special Features

Pause Mode
This function allows you to turn the spa equipment off from the Topside Control so that you can clean the filter or do other routine maintenance without having to turn the breaker off. To turn off all spa equipment, hold down the Pause Button (or Jet 1 Button on 2-Jet Pump Systems) for 5 seconds, or until the topside says “OFF”, then release the button. Wait a few moments before proceeding, making sure that the circulation pump has stopped flowing. If the heater was on when you started the Pause, your circulation pump will keep running for 1 or 2 minutes to cool down the heating element. You have 30 minutes total to complete your maintenance before the spa starts up automatically, so have everything handy to

do your maintenance so that the spa doesn't start before you are ready. If you wish to restart manually, just quickly press the Pause (or Jet 1) button again.

Caution should be used when performing this operation. PRESSING ANY OF THE FUNCTION BUTTONS WHILE THE SPA IS IN "OFF" MODE WILL START THE SPA AGAIN.

It is recommended that you have everything you need to do the filter swap or other maintenance, as the spa will turn on in 30 minutes time, ready or not.

Auto-Purge Cleansing

Your Aries Spa is equipped with an Auto-Purge System that operates 2 times daily, turning on all pumps for 1 minute. This automatic flushing of lines is important to the overall sanitization of the water, eliminating stagnant water in unused plumbing lines. (If it is necessary to Auto-Purge more or less frequently, please see Appendix A for programming instructions.)

Internal Clock

The Internal Timeclock in your spa is computerized. It is a factory set as a 12 hour clock, which controls Auto-Purging and Customized Circulation Modes (see below). Any time power has been cut and reset to the spa, a new period begins. The digital display will show 3 dashes while it runs a purge cycle and performs system diagnostics. This usually lasts approximately 1 minute longer than the purge cycle.

Customized Circulation Modes

Aries sets the Circulation Pump to run in 2 six hour periods, totaling 12 hours per day. If you wish to customize the circulation periods, please see Appendix A for programming instructions.

Freeze Protection and Smart Winter Cycle

In an Aries Continuous Circulating Spa, the potential for freeze damage is almost nonexistent, as moving water doesn't quickly freeze, and the water is kept heated to a minimum temperature. With the addition of the Auto-Purge function, freeze damage is very rare.

In addition, the system monitors the temperature around the spa equipment. When severe cold is detected, the Smart Winter Cycle takes effect. All pumps will come on and run for 1 minute. They will continue to cycle on again, the start time varying from 2-hour to 15-minute intervals, depending on the severity of the temperature around the equipment.

Warning! Aries recommends never draining a spa or leaving a spa drained at any time of the year, especially for the winter. Regardless of draining procedures used, there will always be a small amount of water remaining in the plumbing lines or equipment. In wintertime, this water can freeze and expand, causing serious damage. Aries Spas does not warranty freeze-damage done to spas left drained.

Internal High Limit (Overheat) Switch

Your spa equipment pack is equipped with a heater overheat sensor. This sensor protects your heater by turning it off in cases where the water temperature in the heater has reached a higher-than-normal condition. This can happen when your filter is clogged or dirty enough to slow the water flow and water is trapped in the heater for longer-than-normal periods of time.

If the Limit Switch trips, the digital temperature readout will flash, intermittently reading "OH". This "Intermediate Overtemp" will disable the heater until the spa water inside the equipment cools down. When the display stops flashing, the heater's function is restored.

The "Catastrophic Overtemp" happens when temperatures have reached a critical degree. When this happens, the display will read "HL". You must

wait until the temperature in the equipment has had time to cool, then manually reset the system by turning the equipment off, then on, using your breaker or service disconnect.

Interior Fittings

Venturi Controls (Air Controls)

Venturi Controls are knobs located on the upper ledge of your spa. Depending on the model, your spa may have one or several Venturi Controls, each operating a certain number of jets. They control the amount of air that is mixed with the water coming through the jets, which increases or softens the pressure of the jets.

Venturi

To control the amount of air introduced into your jets, turn the Venturi Control to the desired setting. For maximum air injection and a firmer massage, turn the knob toward counterclockwise. For a more gentle massage, turn toward clockwise.

When the jet pump is not running, the venturis will do nothing. It does not matter what position they are left in when you leave the spa.

Circulation Fittings

All of the fittings under the water in your spa are considered circulation fittings. They either circulate air or water. Your spa has two types of water fittings; suction and return. Suction Fittings are designed to suck water from the spa into the equipment, while Return Fittings push water from the equipment back into the spa.

The spa's Circulating Pump circulates the water by pulling it from the spa via Suction Fittings (the Top Suction or Skimmer, and the Bottom Suctions), passing it through the heater and filter, then returning it to the spa via the Circulation Jets, usually located near the light or step of the spa.

Normally, there are two Circulation Jets: one is a normal-sized jet, the other is very small.

The spa's Jet Pump circulates water by pulling it from the spa via separate Bottom Suction Fitting and returns the water through the Massage Jets.

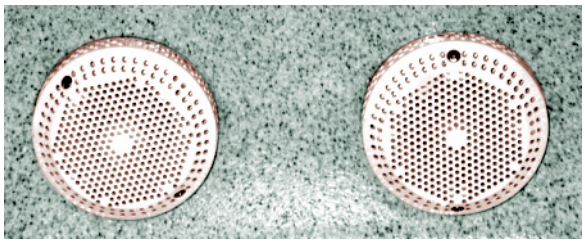
Suction Fittings

The Top Suction, or Skimmer, is designed to skim debris from the water's surface. The Bottom Suctions are designed to pull water and dirt from near the spa's bottom. The Suctions draw water from the spa whenever the Circulating Pump is running.

It is important that the perforated cover of the suction always be in place and in good condition.

If it is damaged or broken, it must be replaced immediately. Dangerous conditions may occur if the spa is operated with damaged or missing suction covers.

Skimmer



Bottom Suctions

The Circulating Pump will draw water from one bottom suction and the skimmer. Because this pump is of a small energy-efficient design, you will probably not feel the suction of this particular bottom fitting.

Hydrotherapy / Massage Jets

The Massage Jets in your spa are powered by the high-speed Jet Pump. The water is drawn from your spa via a Bottom Suction, and returned through your Massage Jets.

These jets massage sore muscles and stimulate and increase blood circulation to aid in the recovery of injured body parts. Most spa owners agree that this is the single most beneficial function of their spa.

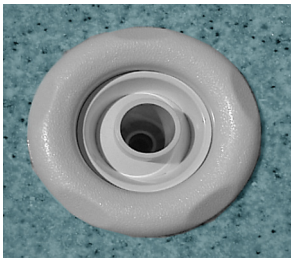
Below are the description and operation of several of the more popular Massage Jets available at press time. In our continuing effort to update and improve the quality of our product, and because of the rapid advancements in the components available to us, jet availability changes frequently. Because of this, the jets described below may not be identical with those being used at the time of your spa's manufacture.

Standard Jets

You can adjust both the direction and the velocity of water flow from the Standard Jets. The water flow can be reduced by turning the center nozzle or outer ring (depending on the model) clockwise. By closing one jet, the pressure in the other jets is increased.

Do not close more than four jets at one time. Doing so can damage the plumbing system of your spa.

You can adjust the flow from the jet by aiming the nozzle in the desired direction.

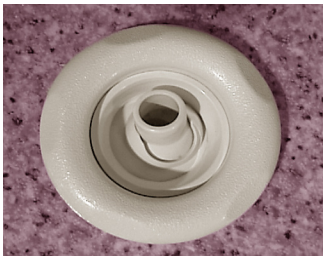


Standard Jet

Circular Jets

There are several versions of these jets but they are all distinguished by their circular flow of water. Some allow you to adjust the diameter of the flow pattern. Certain designs have two circles that overlap each other when operating.

One model has an exterior that looks like a "honeycomb" and has a pulsing circular effect.



Circular Jet

Jumbo Jet

The Jumbo Jet is optional, and is not available on all models.

Jumbo Jet

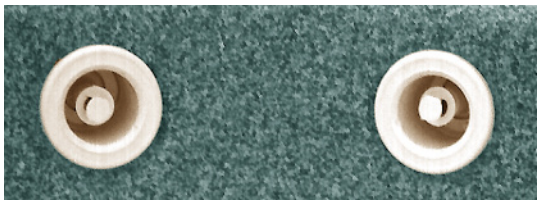
This is the big brother of the Circular Jet, and is the largest jet you will have in your spa. It uses a large volume of water for a deep-muscle massage.

The water pressure can be adjusted by turning the outer ring of the jet clockwise (to decrease pressure) or counterclockwise (to increase pressure).

Neck Jets

Neck Jets are designed to be above the water level. They can be turned on or off by pushing the nozzle inward (off) or pulling it outward (on). Most people prefer to leave the Neck Jets off when not in use.

The water level in the spa should not be above the neck jets.



Neck Jets

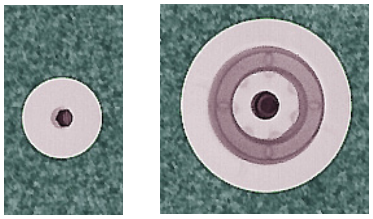
Circulation Jets

Do not obstruct the flow of these jets or serious damage to your equipment could occur.

The Circulation Jets are two jets, usually located near the light and/or interior spa steps. After the water is circulated through your Circulating Pump, it is returned to the spa via these two jets.

All Aries Spas are equipped with an Ozone Jet. If your spa also has the optional Ozone Generator (described later in this manual), the air bubbles coming from these jets contains the cleansing agent it produces. If not equipped with an Ozone Generator, the bubbles are merely air. (If your spa does not presently have an Ozone Generator, one can be added at a later time.)

Occasionally, jets that look similar to the Ozone Jets will be used in place of Neck Jets or Regular Jets in the spa, or as air injectors (see below). These jets are not attached to the Ozone Generator, but rather are similar to standard jets. *The Circulation & Ozone Jets are not adjustable*.



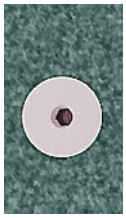
Ozone Jet (L)
Circulation Jet (R)

Air Injectors

Most Aries Spas contain 14 to 20 Air Injectors, depending on the spa model. These are white or stainless fittings located in the seating area of your spa. When you turn on the Air Blower Pump, air is forced through these fittings to make stimulating, tingly bubbles.
The source for this air is the inside the spa enclosure, The air that passes through the blower absorbs some heat from the blower, but it is not uncommon for the air to feel cooler than the spa water.

Recovery Fitting

The Recovery Fitting is a small jet above the spa water level. It may look the same as the Ozone Jet, or it could be a round cap, about an inch in diameter. This fitting is designed to draw air from the space between your spa water and the spa cover. If your spa is equipped with an Ozone Generator, this air contains the excess cleansing agent (a gas) produced by the Ozone Generator. This excess is reintroduced into your spa's water, to efficiently get the maximum cleansing effect possible.



Recovery Fitting

If your spa is not equipped with an Ozone Generator, this fitting does nothing. It is there to facilitate the addition of an Ozone Generator if one is desired at a later date.

The water level in the spa should not be above the recovery fitting.

Maintenance

Filter

The most important function of the Circulating System is to run the spa water through the filter to remove dirt, debris, and body oils. The filter cartridge is located inside the filter canister, hidden by the round lid containing inset drink holders.

The Top Loading Pressure filter is most commonly used due to its ease of cleaning and maintenance. It is available in the majority of Aries Spa models.

Cleaning Your Filter

Cleaning of the filter is the single most important maintenance procedure that a new spa owner can perform.
Aries recommends that you clean your Filter at least once a week. If cared for properly, you can expect to get about 1 years' use from each Filter Cartridge, depending on spa usage. When the Cartridge becomes worn, damaged, or heavily debris-embedded, replace it with a new one.

Before cleaning the Filter, make sure to turn off power to the spa. Once power to the spa has been terminated you may proceed to clean your Filter.

> *As the Top Loading filter is a pressure filter, make sure that power to spa is turned off before attempting to open this type of filter. Do not open the filter case while the Circulating Pump is operating or serious bodily injury could occur.*

To locate the Filter Cartridge, remove the round cover located on the top edge of your spa. Underneath, you will see a dome-shaped plastic lid held in place with a "mason-jar" type retaining ring. *Before attempting to open this, make sure that you have turned off power to the spa.*

Release any excess air in the Filter by turning the small plastic Bleed Valve on top of the lid. Then unscrew the retaining ring by turning counterclockwise. Once the retaining ring has been loosened, lift the ring and the Filter lid. Inside, you will find an accordion-folded fabric Cartridge. Firmly pull up on the Cartridge to remove it.

Filter Lid

Spray the cartridge with high pressure water from your water hose. The use of a pressure nozzle is recommended to ensure that the water cleanses between the accordion-like pleats of the filter. Start at the top working your way down, while rotating the Cartridge. If it appears to be heavily embedded with body oil or debris, you can clean it in your dishwasher, as the very hot water helps to break down the body oils. **If you choose to use this method, do not add detergent, and make sure that the dishwasher's drying cycle is turned off.**

Filter Cartridge

Note: For convenience sake, you may want to purchase an extra Filter Cartridge. When one needs cleaning, you can replace it with the other, and soak the dirty Cartridge in a mild solution of swimming pool acid (50 parts water to 1 part acid) or a 50/50 solution of household bleach, overnight. Then let it dry and shake or brush lightly. This process helps to remove body oils and fine embedded particles, resulting in the cleanest-possible Cartridge with the least amount of effort. If you use this method, make sure to hose off the cartridge thoroughly (after soaking and brushing) to remove bleach or acid residue.

Before repositioning the Cartridge, examine it for any tears or other damage. If damage is detected, you will need to replace it.

Reposition the Cartridge in the filter canister by reversing the process you used to remove it. When you have completed reassembling the filter, turn on the spa. The Circulating Pump will come on immediately. You should see water starting to flow from the Return Jets and hear bubbling and gurgling. This is air being purged from the system. To remove any remaining air, momentarily turn counterclockwise the black Bleed Valve on top of the filter lid. When water starts to spray out, turn valve clockwise until closed.
Make sure that there are bubbles coming from the Circulating Jets. If not, refer to the "Initial Start-up" section of this manual. Once your Circulating Pump is operating properly, return Thermostat to previous setting.

Also, check to see that no water is leaking from around the "mason-jar" lid. If you detect any leaks, turn off the power and remove the lid again. Lubricate the rubber gasket on the underside of the spa lid with a small amount of Vasoline©, marine or silicone lubricant, . Replace the lid as before and restart the Circulating Pump. If leaking persists, call Aries Service Department for assistance.

Water Treatment

One of the benefits of Aries' Continuous Circulating System is water treatment. If you are sanitizing with chemicals, this system will effectively stir water to aid in the mixture of chemicals and water. If your spa is ozone equipped, continuous injection of ozone will create a nearly chemical and maintenance-free spa.
Water treatment is a somewhat specialized topic. We will attempt to cover some of the basics, but we recommend visiting a spa chemical store, or the Aries Factory for in-depth information. Also, there are several good books available on the subject.

It is necessary to treat your spa's water for two important reasons:
1) To keep the spa water free from harmful bacteria and algae.

2) To keep the water's percentage of acidity and alkalinity (pH) in balance, so that your spa's equipment will not be corroded by acid or clogged by alkaline buildup.

Disinfectants

There are several alternatives for disinfecting your spa, including chemical disinfectants (most notably bromine-based products), and non-chemical methods (such as ozone generators, reverse ionizers, etc.). Ask your spa specialist for a more detailed explanation.
The non-chemical methods will not only sanitize your water, but also help to stabilize the water's pH balance (explained below). This is because you aren't altering the balance by adding chemicals (which have a pH factor of their own).

Bromine

To chemically treat against bacteria, spa bromine is often used. Many types can be used in self-dispensing containers. If you use these, check frequently to make sure that your dispenser hasn't run out of chemical. Also, using a spa test kit, test the water frequently to make sure that your sanitizer is at acceptable levels.

> *The use of chlorine products are not recommended in Aries Spas.*

Occasionally, it is necessary to add a larger-than-ordinary quantity of disinfectant to remove body oils and proteins from the water. This large dose, or "Shock Treatment", can be purchased in handy packets, or in bulk form.

Ozone Generator

Most of the bottled drinking water today is purified by ozone as part of the process. The Ozone Generator uses the corona discharge method to make ozone (O^3), a highly effective sanitizer, to purify the water.

Because this method of sanitizing uses fewer chemicals, chemical residue in the spa water is lessened. Also, because you are not adding as many products with their own pH factor (see below), the pH of your spa water stays balanced longer.

> *When using an Ozone Generator for sanitizing, it is extremely important to operate the Circulating Pump for sufficient periods of time each day. We recommend operating the Circulating Pump continuously.*

Adjusting pH

It is necessary to keep your spa water's pH (acidity /alkalinity ratio) at acceptable levels. A simplified explanation of pH is that it is like a ruler, numbered from 1 to 14. If you balanced the center of the ruler on your finger, the center of the ruler, 7, is neutral, meaning the degree of acid and the degree of alkaline are equal and they neutralize each other. The ruler balances. The higher the number past 7, the more alkaline the water is - the more unbalanced. For example a reading of 7.5 shows barely alkaline water, while 9 is much more unbalanced, more alkaline. On the other hand, the lower the number, the more unbalanced with acid the water is. The desired pH level of your spa's water is within the range of 7.2 to 7.8.

The more acidic your water, the more chance your heating equipment and other plumbing will be damaged by the acid content. The more alkaline the water, the more chance that your heater and plumbing lines will be clogged by alkaline buildup.

Your test kit should have a pH test included. After testing, if your pH level is too high, (the water is too alkaline) use one of the pH-lowering products found in many pool and spa stores. If this product is acid, it should be in powder or dry form. Use of liquid acid is not recommended. If the pH level is too low, (the water is too acidic), use one of the pH-raising products available at your local spa supply store. (You might try adding household baking soda to raise the pH if only slight adjustment is

needed.) It is best to adjust pH gradually. Remember, it is easy to add, but difficult to remove chemicals from your water.

> *We do not recommend using chemicals formulated for swimming pools in your spa. These products are highly concentrated for use in large volumes of water (15,000 to 30,000 gals.). Proper dilution of these chemicals to an acceptable strength is difficult at best. Whenever possible, use one of the chemicals specifically formulated for spas. The Aries Factory carries a complete line of spa chemicals.*

Preventing Hard Water or Staining Damage

In some instances, water from you city source or well is extremely hard or contains excessive minerals. There are several good products that can be added in maintenance doses to prevent staining or hard-water buildup. Check with your local pool and spa supply or Aries Store.

Preventing Algae

In some cases, if Ozone or chemical levels temporarily fall, algae can begin to grow in your spa's piping. Once growing, normal levels of Ozone or chemicals are usually not sufficient to completely kill the roots of the algae. Spa algaecide is available at most pool and spa supply stores and at Aries Store. It can be used in maintenance doses to prevent algae.

Caring for your Spa's Surface

To clean the acrylic surface of your spa, use a nonabrasive cleaner, such as Lysol Tub & Tile Cleaner®, Ivory Bathroom Cleaner®, etc. Make sure to rinse thoroughly before refilling. Otherwise, your spa will make soapsuds when you operate the spa. Keep fingernail polish remover, acetone, etc. away from the spa's surface.

Keep sharp instruments, such as nails or stones from coming into contact with the acrylic surface of your spa. If your spa's surface does become slightly scratched, Ineos (the maker of Lucite©) recommends applying a

coat of auto wax on the scratch. For more serious scratches, it is suggested you carefully sand the scratch with 400 grit sandpaper. For scratches or chips that go completely through the acrylic surface, acrylic repair becomes necessary. There are repair kits available at most spa supply stores.

Deep-Cleaning of Plumbing Lines

Occasionally, spas that are not used for long periods of time will develop "white flaky stuff" floating on the surface. This "stuff" is usually algae and can be removed with Algae Treatments or by draining and refilling. But sometimes a simple drain and refill of the spa is not enough. Occasionally, a deep-cleaning or flushing of the spa's internal plumbing system is necessary to remove buildup of algae growth.

To accomplish this, first turn the heater off by lowering the desired temperature. Add common bleach to the spa water; One gallon for 7' spas and two gallons for 8' spas. Run the Jet Pump and Air Blower Pump for 5 minutes. Then let the water sit for 20 minutes. Repeat running the jets and air blower, then letting stand, several times as needed. Finally, drain the spa and refill with fresh water. Install a new filter cartridge. This is the best method for deep cleaning of the internal plumbing. *Eco One Jet One* ® is a deep cleaning products made specifically for this purpose, and can be purchased at the Aries Store or shipped directly to your home.

Draining your Spa

Occasionally, it may become necessary to drain your spa for thorough cleaning or other reasons. Aries recommends draining and refilling the water at least once a year.

> *Before draining your spa, turn off spa's Breaker or Service Disconnect. Otherwise serious damage to equipment may result.*

Siphoning is the easiest method for draining your spa. Before siphoning, make sure that your pump is off and will remain off while the spa is draining or empty. The easiest way to start a siphon is to leave your garden hose hooked to a water spigot, with the free end of the hose in your

spa water. Turn on the faucet, as if to add water to your spa. As soon as water starts running into the spa, quickly turn off the water and unscrew the hose from the faucet. The water will automatically start siphoning out.

Note: The above method of starting a siphon only works when the faucet is below the water level of the spa.

Another way of emptying your spa is to use the hose bib or spigot that is attached to the equipment pack. Open the spigot. It is best if you attach a garden hose to the faucet, keeping the water off of the Equipment Pack. The water will start to drain out as long as the free end of the hose is below the water level of the spa.

Note: The above method will drain the water only to the level of the lowest circulating fitting in the spa (the lowest Bottom Suction). The remaining water will have to be siphoned (as described above) or bailed out.

Troubleshooting Guide

Problem — Possible Causes/Solutions

Spa Equipment does not operate. Nothing works.

Breaker has possibly tripped or may be turned off.

Reset breaker. As the breaker will only trip to halfway, make sure to turn it all the way off, then back on to reset it.
If GFCI Breaker resets for a moment, then trips again, see "Blower does not work" below.

Additional Household circuit breaker has tripped.

If there is a secondary or main breaker that powers your spa, switch breaker to "Off" position, then reset to "On".

Equipment is not wired correctly, or isn't provided with proper power.

If you have questions about whether your spa is wired correctly, call your spa dealer or the factory.

Can hear Pump running, but water is not circulating.

Knife Valve(s) are closed or partially closed.

Digital Readout may read "FLO". Shut off spa immediately. Otherwise, your equipment will "dry-fire" and burn out. Make sure all knife valves are in open position (pulled up). If they are fully down and locked into position, they must be turned one-half turn before they will pull open.

Circulating Pump has drawn air and lost prime.

Digital Readout may read "FLO". Make sure that the water level in the spa is approximately to the middle of the Skimmer. Turn Thermostat to the lowest setting to protect heater. To release air from the system, with pump running, loosen (but do not remove) Bleed Valve located on the Filter lid. (This is a small screw-like fitting on top of the Pressure Filter.) Wait until water starts to spurt from the Bleed Valve, then re-close.

Don't let the pump run for more than ten minutes without prime. To do so could cause serious damage to your equipment. If, after 10 minutes,

your pump has not picked up prime, wait 1 hour and try again to restore prime. If you still can't start circulation, then call Aries Service Department for additional tips.

After prime has been restored, reset the Thermostat to desired temperature setting.

The Filter Cartridge is very dirty.

Digital Readout may read "FLO". A clogged Filter Cartridge may not allow water to pass through to the spa. To verify whether this is your problem, remove the Filter Cartridge, and reseal your filter without the Cartridge inside. If the water now circulates properly, clean your Filter Cartridge thoroughly, as explained in "Cleaning your filter". If, after cleaning, it still restricts circulation, it has probably become heavily embedded with debris and oil. It will be necessary to replace the Cartridge.

The Knife ("T" shaped) Valves may be partially or fully closed, causing insufficient water flow (see "Filter Cartridge is dirty" above).

Digital Readout may read "FLO". Make sure that all Knife Valves on either side of the Equipment Pack are completely open ("T" pulled fully outward), and restart spa.

Water level in spa is below normal operating level, causing insufficient water flow to heater

Digital Readout may read "FLO". Fill spa to appropriate level (to about the middle of Skimmer) and restart.

Internal "overtemp" switch may be tripped

Digital Readout may read "OH" or "HL". Do not enter water until spa has cooled down. If the water temperature in the heater tube gets too hot (106˚ spa water), the high limit switch will trip and turn off the heater and other accessories to protect the spa equipment from overheating. If this occurs, "OH" is displayed alternately with temperature in the digital readout area of the Topside Control. When the temperature lowers, display will return to normal and the heater and other accessories will be enabled.

It may take several hours (or overnight, in warm weather) for the temperature to fall low enough for the High Limit to be reset. (A clogged, dirty Filter Cartridge can cause the Overtemp Switch to trip.)

In extreme cases, "HL" may show in the display. All functions will be disabled until the water in equipment cools. To reset (after water has cooled), reset system by turning the spa off, then on.

Spa water is too warm and won't cool off

You've heated the water too warm, and the outside temperature is hot, not letting the water cool .

Turn down the Thermostat, and add cool water to your spa. If the outside temperature is very hot, you might try adding some ice, also. This will help speed the process of cooling the water.

Can hear Jet Pump running, but water is not circulating

There is an air lock inside the Jet Pump system (this is a common problem in in-deck installations, especially after spa has been drained and refilled).

After turning system off, locate the Quick Coupler (it is white and has ridges to aid in gripping) closest to the pump in question. Loosen it by turning counterclockwise until water starts flowing out. Retighten and try to operate the system again.

All jets are partially or fully closed.

Shut off spa immediately, otherwise your jet pump may overheat and be damaged. Make sure to open 12 jets at least 75%. Open by turning their outer ring counterclockwise.

Knife Valves are partially or fully closed.

Shut off spa immediately, otherwise your Jet Pump may overheat and be damaged. Make sure to open all Knife Valves completely. If they are locked, rotate the handle one-half turn and then pull up.

Jet Pump and/or Blower Pump shuts off after using awhile

Jet Pump and/or Blower Pump has been running for approx. 30 minutes, and has automatically shut itself off.

Push the "Jet" and/or "Blower" button(s) and the Jet Pump and/or

Blower will restart and run for an additional 30 minutes, before again shutting off automatically.

One of the Bottom Suction Fittings in the footwell area isn't working

The suction is a suction for the circulating pump

Your spa should have 3 or more Bottom Suctions. One of these is used to return water to the Circulating Pump, the others return water to the Jet Pumps. The Jet Pumps are large pumps that move a great deal of water and the pull from their suctions is very noticeable. The Circulating Pump is very small (for energy efficiency) and moves water at a much slower pace. You will not be able to see or feel the pull of its bottom suction, but will be able to see the water returning to the spa via the Circulation & Ozone Jet

The Top Skimmer is not drawing everything in

This is normal and takes no action on your part.

Your spa's Circulating Pump moves small volumes of water over long periods of time for efficiency. Eventually, the surface items are drawn into the filter.

Nothing works except Circulation Pump and Light

The system has been incorrectly wired and is only receiving 110 power, instead of 220.

Call your electrician, or call Aries Service Department for proper wiring instructions.

Air Blower does not work

Air Blower Pump's automatic shut-off feature has kicked in.

The pump is designed to automatically shut off after 30 minute run time to prevent overheating if user should forget to turn off. Wait a minute, then reactivate blower.

Air Blower Pump's Internal High Limit has been tripped.

The pump has become overheated. The internal switch will reset itself after the unit has cooled sufficiently. Wait 20 minutes or so and try to turn on again.

When Air Blower is turned on, all equipment shuts off and won't restart

Air Blower has gotten wet.

The GFCI breaker has tripped because of moisture. The most common causes are:
1) overfilling of the spa (or large bather load) causing water to overflow the P-trap.
2) Large amounts of humidity or rain, runoff from sprinklers, etc.

To correct the problem, drain spa water to appropriate level if necessary. Make sure there is no standing water under equipment. Reset GFCI. If GFCI immediately trips, the blower may still have moisture in it. It may take up to a few days for the blower to dry sufficiently to be able to reset the GFCI. If, after a few days, the problem persists, contact your spa dealer or Aries Service Department..

Light won't turn on

The light bulb is burned out.

In portable spas, take off the back of the light and change the bulb. Replacement bulbs can be found at most large automotive parts stores, or at Aries Store. Some inground spas are equipped with swimming pool-type lights, accessible from the front. Contact your spa dealer for bulb replacement instructions.

Water is dripping from plumbing near the equipment area of my spa

"Quick-Coupler" Union has become loose and needs tightening

Your spa has been designed with Quick-Coupler Unions on either side of the equipment so that any necessary servicing can be done easily. Over time, these unions can vibrate loose and start to leak. You can tighten them by turning until hand-tight. If you see a union that has screws, don't try to tighten the screws (They merely hold the two parts of the union together), If you turn the union to tighten and the leak gets worse, try turning the other direction.

I just cleaned my filter and water is dripping from the canister

Water has splashed into the filter area during cleaning and has drained down.

Any water that was spilled into the filter cartridge housing during the filter-cleaning process will eventually run down the canister and create the appearance of a leak. This will stop once all spilled water evaporates. No action need be taken on your part, except to make sure that the dripping doesn't continue (see below).

The filter canister lid wasn't replaced correctly or there are problems with the lid's Gasket (O-Ring)

Make sure to turn off power to the Circulating Pump, then remove filter lid. Check the Filter Lid O-Ring for damage or brittleness. Lubricate or replace if necessary. Make sure the O-Ring is seated properly in the groove of the lid. Replace lid, making sure that it doesn't cross-thread, and tighten it sufficiently.

Water in spa is "ugly" or smells bad

Water used to fill the spa was dirty, or water in the piping of the spa was dirty.

It can take your spa a day or two to clear up when initially filled. Make sure your spa is in the "24 Hour" Mode and running continuously. In extreme cases, especially when a spa has been filled with well water, it may be necessary to drain and refill the spa, using filtered water. (Water filters may be purchased at the Aries Spa Store.)

Water is not being circulated or filtered sufficiently.

Make sure your spa is set to run at least 12 hours per day so that the Ozonator (if so equipped) or chemicals will be properly mixed in the water.

Filter Cartridge is clogged with body oils or other debris, or filter is damaged

Thoroughly clean the filter, as described in "Cleaning Your Filter". If it still seems heavily embedded, or is damaged, replace it. If the filter is difficult to clean and is over a year old, it is probably time to replace it.

The water has not been chemically treated or there is a chemical imbalance.

See the section on water treatment elsewhere in this manual.

If spa is equipped with Ozone Generator or other non-chemical sanitizer, it is not operating properly.

Make sure the device is plugged in tightly. If it has a fuse, check to see that the fuse has not blown, and replace if necessary.

Verify that a blue or green light is being emitted from the Ozone Generator. Also, make sure that bubbles are coming from one or both ozone jets located near the light fitting.

Make sure your spa is circulating at least 12 hours per 24 hour period so that it can do its job.

Algae has grown in the piping system of the spa.

Make sure Ozonator (if so equipped) is working properly or that sanitizers are at the proper level. Use Spa Algaecide to kill algae and continue to use in maintenance doses to keep it from returning. If necessary, use the Deep Cleaning of Plumbing Lines method in the Maintenance Section of this manual.

Trouble Codes

If your computerized Equipment Pack senses an internal problem, it will put an error or trouble code in the digital readout area of your Topside Control. Following are the most common error codes, and the solution for each.

3 Dashes on Digital Display

The digital display will show 3 dashes any time the power to the system has been lost, then restored, The internal clock cycle will reset. (None of your other settings will have been changed.) The 3 dashes will remain while the system purges, and will continue to display for about 1 minute longer, until system diagnostics have run.

"HR"

An internal hardware error has been detected in the equipment. Contact an Aries Spa Technician.

"HL"

This appears when the spa's water inside the equipment has reached 119°. Do not enter the water! Remove the spa cover and allow the water to cool down, then shut power off and power your spa up again to reset the system.

"AOH"

The temperature inside the spa skirt is too high, causing the internal temperature in the equipment to increase above normal limits. Open the skirt and wait until the error clears.

"FLO"

The system does not detect any water flow while the circulation pump is running. Check and open water valves and jets, check that water is at appropriate level, clean the filter. (See troubleshooting for additional information.)

" Prr"

A problem is detected with the temperature probe. Contact an Aries Spa Technician.

"OH"

The water temperature in the spa has reached 108o. Do not enter the water! Remove the spa cover and allow the water to cool down to a lower temperature. Call the Aries Spa Technician if the problem persists.

rLy

The system has detected a stuck relay error in the equipment. Call the Aries technician.

"UPL"

No low level configuration software has been installed into the system. Call the Aries Spa Technician.

Flashing Arrow under Filter Icon

The arrow under the Filter Icon will flash when the system is operating the pumps in "Smart Winter Mode". It means that the temperature near the equipment is very low. This is not a malfunction, and the system is operating correctly.

Flashing Arrow under Heater Icon

The arrow under the Heater Icon will flash when the system has discerned that the temperature of the water has fallen below the point where you set it. It will continue to flash until the heater actually comes on. It is not a malfunction, and the system is operating correctly.

Appendix A

Special Programming

Setting a Customized Circulation Mode

Your Aries Spa is factory-set to run for approximately 12 hours per day (6 hours on then 6 hours off for each 12 hour interval).

Before you change this setting, it is wise to understand how the Internal Timeclock works. Each 24 hour period is broken into intervals. At the factory we set 2 intervals of 12 hours each into your equipment. We program the spa to run for 6 hours in each interval, totaling 12 hours per day.

Before beginning to program your spa equipment, first decide how long in each 24 hour period you would like your spa to circulate. Then decide in how many intervals you want to divide your 24 hours. You can divide your 24 hours into as many as 4 intervals (which would be 6 hours long each). In each interval the Automatic Purge Cycle will run for 1 minute.

If, for example, you decided you want your spa to run for 16 hours per day, but at 4 different intervals, the spa would circulate for 4 hours then be idle for the next 2, on again for 4, off for 2, on for 4, off for 2.

To begin programming, do the following:

1. Push and hold the Light button for about 5 seconds, until the digital readout reads “d” (duration) followed by 1 or 2 numbers. Release the light button. The 2 numbers following the “d” represent how many hours per interval the spa is set to circulate. Use the up or down arrows until the number represents the hours you want the spa to circulate. (0 would be no circulation, 24 would circulate continuously.) (Factory setting is 6 in 2 intervals).
2. **P**ress the Light button again. It should now read “F” (frequency) fol-

lowed by a number. This is the number of intervals the 24 hour day is divided into. Use the up or down arrows to set the number of intervals you wish. (Factory setting is 2).

3. **P**ress Light button again to confirm. Another "F" will be displayed, this time with no number following. This "F" stands for Fahrenheit. To change to Celsius press the up or down button.

4. Press the light button once more. A filter cycle will start immediately.

During the "off" period in each run cycle, if heat is required, the circulation pump will come on and the heater will operate until the desired temperature is reached, at which time the circulation pump and heater will again turn off. During the "off" period, jet, air blower and light functions are still available to be used.

> *It is recommended that when you initially set to the Customized Circulation Mode that you do this in the evening, so that the operating times will then be at night, in the cooler periods.*

At any time you can easily reset the period's start time by turning power to the system off, then on (using your breaker or service disconnect). Any run time settings you have previously set will be saved, but the cycle will start when you restore power to the system.

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